IN THE CLAIMS

The following claims are pending in the present application:

1-15. (Cancelled)

16. (Previously presented) An apparatus, comprising:

a heat generating device;

a heat dissipating device thermally coupled to a backside surface of the heat generating device; and

a first thermal interface material disposed between the backside surface of the heat generating device and a bottom surface of the heat dissipating device, the first thermal interface material covalently bonded to the bottom surface of the heat dissipating device and/or the backside surface of the heat generating device, wherein the first thermal interface material comprises an electroactive polymer bonded to the heat dissipating device by electrodeposition.

17. (Original) The apparatus of claim 16, wherein the heat generating device is an integrated circuit.

18. (Original) The apparatus of claim 17, wherein the first thermal interface material comprises an epoxy resin covalently bonded to the backside surface of the integrated circuit.

19. (Original) The apparatus of claim 16, wherein the first thermal interface material comprises a molecular composite material.

20. (Original) The apparatus of claim 16, wherein the first thermal interface material comprises a nanocomposite material.

21. (Original) The apparatus of claim 16, wherein the first thermal interface material comprises a thermally conductive polymer.

22. (Original) The apparatus of claim 16, wherein the first thermal interface material has a thermal conductivity greater than 4 W/mK.

23. (Cancelled)

24. (Original) The apparatus of claim 16, wherein the heat dissipating device is an integrated heat spreader.

25. (Original) The apparatus of claim 24, comprising a heat sink thermally coupled to a top surface of the integrated heat spreader.

26. (Original) The apparatus of claim 25, comprising a second thermal interface material disposed between the top surface of the integrated heat spreader and a bottom surface of the heat sink, the second thermal interface material covalently bonded to the bottom surface of the heat sink and/or the top

surface of the integrated heat spreader.

27. (Previously presented) A system comprising:

a printed circuit board;

an integrated circuit package mounted on the printed circuit board, the integrated circuit package comprising an integrated circuit, an integrated heat spreader thermally coupled to a backside surface of the integrated circuit, and a thermal interface material disposed between the backside surface of the integrated circuit and a bottom surface of the integrated heat spreader, the thermal interface material covalently bonded to the bottom surface of the integrated heat spreader and/or the backside surface of the integrated circuit, wherein the thermal interface material comprises an electroactive polymer bonded to the heat dissipating device by electrodeposition.

28. (Previously presented) The system of claim 27, wherein the thermal interface material has a thermal conductivity greater than 4W/mK.

29. (Previously presented) The system of claim 27, wherein the thermal interface material comprises an epoxy resin covalently bonded to the backside surface of the integrated circuit.

30. (Previously presented) The system of claim 27, wherein the integrated circuit package is a control collapse chip connection (C4) package.

31. (New) An apparatus, comprising:

a heat generating device;

a heat dissipating device thermally coupled to a backside surface of the heat generating device; and

a first thermal interface material disposed between the backside surface of the heat generating device and a bottom surface of the heat dissipating device, the first thermal interface material covalently bonded to the bottom surface of the heat dissipating device and/or the backside surface of the heat generating device, wherein the first thermal interface material comprises a monomer deposited by electropolymerization.